WHAT IS CLAIMED IS:

1. A method for calibrating laser pulses from a laser eye surgery system using an image capture device, the method comprising:

imaging a known object with an image capture device;

directing a pulsed laser beam onto a calibration surface so as to leave a mark on the calibration surface;

imaging the mark on the calibration surface with the image capture device; and

calibrating the laser eye surgery system by comparing the image of the mark on the calibration surface to the image of the known object.

2. The method of claim 1, wherein the imaged object comprises a circular shape having a known diameter.

3. The method of claim 2, wherein the known object comprises a circular chrome layer on a glass plate.

4. The method of claim 1, further comprising removing the known object prior to directing the pulsed laser beam onto the calibration surface.

5. The method of claim 1, wherein the imaging of the known object and of the mark on the calibration surface is carried out in the same position.

6. The method of claim 1, wherein the directing and imaging are carried out in the same plane.

7. The method of claim 1, wherein the directing and imaging are carried out in at least one of a laser focus plane or a treatment plane, and wherein imaging of the known object and imaging of the mark on the calibration surface are performed along an imaging optical path coaxial with a laser optical path.

8. The method of claim 1, wherein the calibration surface comprises photosensitive material, silkscreen material, Zapit paper, luminescent material, or photographic material.

9. The method of claim 8, wherein the mark on the calibration surface comprises a permanent change in color or a luminescent glow.

10. The method of claim 1, wherein the calibration surface comprises photoreactive material or polymethylmethacrylate material.

11. The method of claim 10, wherein the mark on the calibration surface comprises an ablation.

12. The method of claim 1, wherein the mark on the calibration surface has a diameter setting in a range from about 0.65 mm to about 6.7 mm.

13. The method of claim 1, further comprising increasing the pulsed laser beam diameter setting over time so as to form a plurality of marks, imaging the marks, and comparing the marks to the known object.

14. The method of claim 13, further comprising decreasing the pulsed laser beam diameter setting over time.

15. The method of claim 14, further comprising determining a hysteresis of a variable aperture.

16. The method of claim 1, further comprising determining a relationship between laser beam diameter and motor counts associated with an iris setting.

17. The method of claim 1, further comprising determining a shape of the laser beam.

18. The method of claim 1, further comprising determining a center position of the laser beam.

19. The method of claim 1, further comprising determining a drift of the laser eye surgery system by monitoring a variance in center positions for each scanned and imaged laser pulse.

20. The method of claim 1, further comprising determining a laser beam deflection.

21. The method of the claim 1, further comprising rotating an optical element along a laser delivery path and identifying a rotation-induced laser induced wobble from a plurality of marks.

22. The method of claim 1, further comprising ablating a patient's cornea with the calibrated system.

23. A method for calibrating laser pulses from a laser eye surgery system using a microscope camera, the method comprising:

imaging a known object with a microscope camera;

scanning a pulsed laser beam across a photosensitive material so as leave an ablation on the photosensitive material;

imaging the ablation on the photosensitive material with the microscope camera;

determining an iris calibration of a laser eye surgery system by comparing the image of the ablation on the photosensitive material to the image of the known object; and

ablating a patient's cornea with the calibrated system.

24. A system for calibrating laser pulses from a laser beam delivery system comprising:

an image capture device orientated toward a treatment plane;

a known object positionable for imaging by the image capture device;

a pulsed laser beam delivery system;

a calibration surface supportable in an optical path of the pulsed laser beam so as to result in a mark on the calibration surface and for imaging of the mark on the calibration surface by the image capture device; and

a processor coupled to the image capture device, the processor determining a calibration of the laser beam delivery system by comparing the image of the mark on the calibration surface to the image of the known object.

25. The system of claim 24, wherein the image capture device comprises a microscope camera.

26. The system of claim 24, wherein the known object comprises a circular chrome layer of known diameter on a glass plate.

27. The system of claim 24, wherein the known object and calibration surface are imaged in the same position.

28. The system of claim 24, wherein the known object and calibration surface are positioned in at least one of a laser focus plane or the treatment plane.

29. The system of claim 24, wherein the laser beam delivery system comprises a laser eye surgery system.

30. The system of claim 24, wherein the calibration surface comprises photosensitive material, silkscreen material, Zapit paper, luminescent material, photoreactive material, polymethylmethacrylate material, or photographic material.

31. The system of claim 30, wherein the mark on the calibration surface comprises an ablation, a permanent change in color, or a luminescent glow.

32. The system of claim 24, wherein the mark on the calibration surface has an iris setting in a range from about 0.65 mm to about 6.7 mm.